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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.   | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------|------------------|
| 10/792,167  | 03/02/2004  | Thomas J. Ribarich   | IR-2453 (2-3908)      | 3703             |
| 7590  | 09/21/2005  |                      | EXAMINER              |                  |
| OSTROLENK, FABER, GERB & SOFFEN<br>1180 Avenue of the Americas<br>New York, NY 10036-8403 |             |                      | SHINGLETON, MICHAEL B |                  |
|   |             |                      | ART UNIT              | PAPER NUMBER     |
|   |             |                      | 2817                  |                  |

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                       |                 |
|------------------------------|-----------------------|-----------------|
| <b>Office Action Summary</b> | Application No.       | Applicant(s)    |
|                              | 10/792,167            | RIBARICH ET AL. |
|                              | Examiner              | Art Unit        |
|                              | Michael B. Shingleton | 2817            |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4-10-05.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

The abstract of the disclosure is objected to because page 6 paragraph [0025] recites element 22 as a “capacitor” yet element 22 is clearly a comparator. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Segawa et al. 6,456,170 (Segawa).

Figures 11 and 22 and the relevant text of Segawa discloses an adjustable oscillator circuit and method for providing a variable frequency signal by providing a timing capacitor 112, 122, an adjustable current source 113, 114, 123, 124 that is coupled to the capacitor for charging and discharging the capacitor at an adjustable rate. Segawa also clearly discloses a threshold circuit composed of at least elements 110, 111, 120 and 121 that is for changing a charging or discharging state of the capacitor based on the charge value of the capacitor and a threshold value VRH or VRL in the threshold circuit for comparison with the charge value of the capacitor to determine the change of the capacitor to determine the change of charging or discharging state (Note at least columns 4 and 5). Also note that elements 110, 111, 120 and 121 form at least one comparator that compares the threshold value to the capacitor charge value. Claims like claim 5 does not limit the invention to just a single comparator and can include a comparator that is formed from a plurality of comparators. Also as noted above the threshold value is actually two threshold values as meant by applicant (See Figure 1 and claim 7) and accordingly VRH and VRL of Segawa is “a threshold value” that determines the two transition points where the charging stops and the discharging begins and where the discharging stops and the charging begins.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhu et al. 5,850,127 (Zhu) in view of Segawa et al. 6,456,170 (Segawa).

Zhu discloses an electronic ballast that employs a conventional VCO (See column 4, around line 30). Segawa is silent on the use of the oscillator in a ballast circuit. Zhu is silent on the details of the VCO. Figures 11 and 22 and the relevant text of Segawa discloses a conventional adjustable oscillator circuit, i.e. VCO and method for providing a variable frequency signal by providing a timing capacitor 112, 122, an adjustable current source 113, 114, 123, 124 that is coupled to the capacitor for charging and discharging the capacitor at an adjustable rate. Segawa also clearly discloses a threshold circuit composed of at least elements 110, 111, 120 and 121 that is for changing a charging or discharging state of the capacitor based on the charge value of the capacitor and a threshold value VRH or VRL in the threshold circuit for comparison with the charge value of the capacitor to determine the change of the capacitor to determine the change of charging or discharging state (Note at least columns 4 and 5). Also note that elements 110, 111, 120 and 121 form at least one comparator that is selectively coupled to a threshold value VRH and/or VRL and compares the threshold value to the capacitor charge value. Claims like claim 5 does not limit the invention to just a single comparator and can include a comparator that is formed from a plurality of comparators. Also as noted above the threshold value is actually two threshold values as meant by applicant (See Figure 1 and claim 7) and accordingly VRH and VRL of Segawa is “a threshold value” that determines the two transition points where the charging stops and the discharging begins and where the discharging stops and the charging begins.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the VCO of Zhu with that of Segawa because as the Zhu reference is silent on the exact structure of the VCO one of ordinary skill in the art would have been motivated to use any art-recognized equivalent VCO such as the conventional VCO disclosed by Segawa.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al. 6,456,170 (Segawa) in view of Daisuke JP01157612 (Daisuke).

Segawa as applied in the above 35 USC 102 rejection and the following: Segawa is silent on the construction of the variable current sources like element 123 in Figure 22 and 113 in Figure 11. Figures 11 and 22 show these current sources as conventional variable current sources.

Figures 1 and 2 of Daisuke illustrates that a conventional variable current source 1 as shown in Figure 1 can be composed of a passive element 15 that is coupled to a switching element and is for setting a minimum amount of current like that of element 16 of the disclosed invention of the instant application. The conventional current source of Daisuke also includes a current mirror that parallels the current mirror 18 of the claimed and disclosed invention of the instant application. It is also noted that both Segawa and Daisuke lacks or is silent on the source of the voltage that controls the frequency of the VCO (Vin in Segawa and "V" in Daisuke.).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the conventional variable current source(s) of Segawa with that of Daisuke because as the Segawa reference is silent on the exact structure of these current sources and shows these current sources as conventional current sources in Figures 11 and 22 one of ordinary skill in the art would have been motivated to use any art-recognized equivalent variable current source such as the conventional variable current source as disclosed by Daisuke.

As to the digital control mentioned above the signal Vin in Segawa is assumed to be an analog signal. However, digital controls are well known in the art for setting an analog value used in a VCO via a D to A converter. Thus the examiner takes Official notice of this. This allows for a digital control to be used such as a microprocessor or the like to control the VCO. Thereby providing more flexibility in the control of the VCO because of the programming.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a D to A converter to come up with the analog signal Vin in Segawa so as to allow for the use of a digital control and digital signals to control the VCO as is conventionally known in the art. One of ordinary skill would have been additionally motivated to provide for a D to A converter so as to allow for the use of a microprocessor as the ultimate source of the Vin signal, so as to obtain the advantage of changing or just the providing of programming that a microprocessor offers as is conventionally known in the art.

Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al. 6,456,170 (Segawa) in view of Ouyang et al. 4,692,717 (Ouyang).

Segawa as applied in the above 35 USC 102 rejection and the following: Segawa utilizes two comparators for the comparator. As noted above the claims 1, 5, 7 and 8 do not exclude the comparator from being composed of a plurality of comparators. However, a fair and reasonable reading of claim 9 includes the use of a single comparator that excludes the comparator from being composed of a plurality

of comparators wherein a switch that can be composed of switches like elements 28 and 32 of the instant application is used to switch the high and low voltage reference signals to the negative input of the comparator.

Such a structure as indicated above is conventional. Note elements 16, 64 and 66 of Ouyang. It is clearly apparent from Ouyang that one advantage to using such an arrangement is that only one comparator is required. It is simply an art recognized way to sense the when the high and low levels are exceeded to control the charging and discharging of a timing capacitor in an oscillator.

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the two comparator structure of Segawa with a single comparator element with the high and low reference signals or sources being switched to the negative input of the comparator so as to reduce the number of comparators as taught by Ouyang. One of ordinary skill would have been additionally motivated to make the combination give the art-recognized equivalence of these two structures.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al. 6,456,170 (Segawa).

Segawa as applied in the above 35 USC 102 rejection and the following: Segawa is silent on the use of a digital value to set the charging/discharging rate. The signal Vin in Segawa is assumed to be an analog signal. However, digital controls are well known in the art for setting an analog value used in a VCO via a D to A converter. Thus the examiner takes Official notice of this. This allows for a digital control to be used such as a microprocessor or the like to control the VCO. Thereby providing more flexibility in the control of the VCO because of the programming.

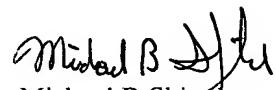
It would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a D to A converter to come up with the analog signal Vin in Segawa so as to allow for the use of a digital control and digital signals to control the VCO as is conventionally known in the art. One of ordinary skill would have been additionally motivated to provide for a D to A converter so as to allow for the use of a microprocessor as the ultimate source of the Vin signal, so as to obtain the advantage of changing or just the providing of programming that a microprocessor offers as is conventionally known in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 and after July 15, 2005 the fax number will be 571-273-8300. Note that old fax number (703-872-9306) will be service until September 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS  
August 28, 2005

  
Michael B Shingleton  
Primary Examiner  
Group Art Unit 2817